No. 8500061

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

D. J. van der Have B. V.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Spirit'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 31st day of December in the year of our Lord one thousand nine hundred and eighty-six.

Attest:

Kenneth B. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
WAREHOUSE & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
Koninklijk Kweekbedrijf en Zaadhandel
D.J. van der Have B.V.

2. TEMPORARY DESIGNATION
VDH 238-78

3. VARIETY NAME
'Spirit'

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
P.O. Box 1
4420 AA Kapelle, The Netherlands

5. PHONE *(Include area code)*
01102-1441

FOR OFFICIAL USE ONLY

PVPO NUMBER
8500061

6. GENUS AND SPECIES NAME
Hordeum vulgare L.

7. FAMILY NAME *(Botanical)*
Gramineae

FILING
DATE 2/7/85
TIME 2:30 ☐ A.M. ☒ P.M.

8. KIND NAME
Spring barley

9. DATE OF DETERMINATION
August 1981

FEES RECEIVED
AMOUNT FOR FILING
$ 1,800
DATE 2/7/85
AMOUNT FOR CERTIFICATE
$ 200.00
DATE November 4, 1986

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
The Netherlands

12. DATE OF INCORPORATION
8th March 1973

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Van der Have Oregon Inc.
33725 ~~10041~~ Columbus Street SE → P.O. BOX 1496
Albany, Oregon 97321 U.S.A.

PHONE *(Include area code)*: (503) 967-8923

Sent copy as per phone call 11/5/86

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☒ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ Foundation ☒ Registered ☒ Certified

Sent copy as per phone call 2/21/85

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
M.E. Roothaan	21.1.1985
SIGNATURE OF APPLICANT	DATE
	1

FORM WA-470 (3-84) (Formerly LMGS-470 (8-83) which is obsolete.)

INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $1,800 fee *($200 filing fee and $1,600 examination fee)* to U.S. Department of Agriculture, Agricultural Marketing Service, Warehouse and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. *(See section 180.175 of the Regulations and Rules of Practice.)* Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

15 If "Yes" is specified *(seed of this variety be sold by variety name only as a class of certified seed)* the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. *(See section 180.16 of the Regulations and Rules of Practice.)*

16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

8500061

Exhibit A

Origin and Breeding history of the spring barley variety 'Spirit' (VDH 238-78)

1. The variety was selected from the cross:
   VDH 117-71W * VDH 289-71
   The cross was made in 1975 in the Netherlands.
   The parent lines were experimental lines from the Van der Have spring barley selection programme with the following pedigree:
   VDH 117-71W: 63156 * Sultan
   VDH 289-71 : Muzurka * Lofa

2. The F1 from the cross was raised in a winter greenhouse generation in 1975/76 in Rilland, the Netherlands.
   From F2 to F6, progenies from the cross were selected according to a modified pedigree-method. The F4-generation was propagated off season in New Zealand, all other generations from F2-F6 were drilled in Rilland, the Netherlands.

   The first single rep. yield trials were carried out in 1979 in the Netherlands and Denmark in F7-generation.
   From 1980 onwards, replicated yield trials were conducted in several European countries.

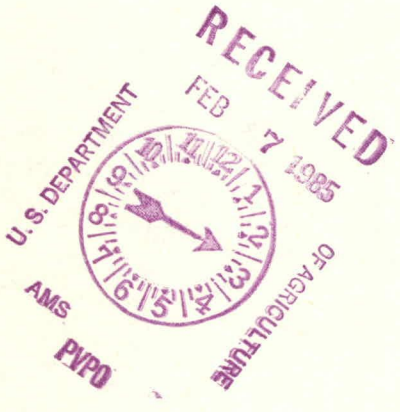
   Based on good results in European trials, applications for official trials were made in the United Kingdom in autumn 1981 and in Ireland in autumn 1982, both with the experimental designation VDH 238-78. In both countries, the name proposal 'Andante' was submitted for the variety.
   The variety was withdrawn from official trials in the UK and Ireland in resp. autumn 1983 and spring 1985.

   The purification and maintenance of the variety started in 1980 by drilling 30 plant progenies. Starting from these plant progenies, purification and maintenance were continued in the subsequent years following a strict pedigree-system: each year, a number of plant progenies (single rows) and plant progeny plots ($12m^2$) were drilled and closely examined for uniformity and stability for fieldcharacters as well as morphological description characters. After field- and laboratory examinations plant progeny plots were bulked to produce breeders' seed for further multiplication.
   All maintenance programmes were drilled in Rilland, the Netherlands under isolation with wheat and were harvested with utmost care to avoid contamination.

3. In 1983 variation was observed for colour of the plants in the juvenile stage. The plots in which these variants were observed originated from a breeders' seed productions harvest 1981. In stocks originating from later breeders' seed production, no such variants were observed any more. Variation for other description characters was not observed in higher frequencies than 1 in 1000. Therefor the variety can be classified as uniform.

4. As evidence for the stability of the variety, it should be mentioned that the presently available breeders' seed stock of harvest 1983 originates from F10-generation after three generations of controlled maintenance and purification.

Rilland, 21-1-1985
M.E. Roothaan / IM.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PVPO

8500061

Exhibit B

Statement of Novelty of the Spring barley Variety 'Spirit' (VDH 238-78)

1. Description.

Type	two-rowed spring barley.
Culm	medium short, with closed collar and straight neck.
Leaves	during stem elongation semi-prostrate growth habit. Leaves of medium width. Strong anthocyanin coloration in auricles and strong glucosity. Glabrous basal leaf sheaths.
Ear	medium long, fairly slender and tapering ears with long, rough awns. Strong anthocyanin coloration in tips of awns. Medium waxy ears. Ear attitude at flowering semi-erect at ripening recurved. Medium dense ear with V-shaped implantation of sterile spikelets.
Grain	covered grain, long haired rachilla. Without hairs on ventral furrow. No denticulation of lateral nerves of lemma - Weak anthocyanin coloration in lateral nerves of lemma.
Other information	heading time similar or slightly later than Menuet and about 6 days later than Unitan. Straw length: about 3-4 cm taller straw than Menuet and about 8 cm shorter than Unitan. VDH 238-78 has a very good resistance against powdery mildew. Race specific tests in 1982 indicated, that the variety possesses an unidentified mildew resistance with a strong effect, similar to the resistance factor MLa 1, (Algerian 1179). The variety is susceptible to DDT.

2. Distinction from other varieties :
The variety which, to ouw knowledge, most closely resembles the variety VDH 238-78, is the spring barley variety Menuet (Plant Variety Protection certificate no. 7800042) VDH 238-78 can be distinguished from Menuet by the following characters :

- DDT-reaction: Menuet resistant, VDH 238-78 susceptible.
- Hair covering of glumes: Menuet weak, VDH 238-78 strong.
- Rachilla hairs: Menuet short, VDH 238-78 long.
- Denticulation of lateral nerves of lemma: Menuet strong, VDH 238-78 none or very weak.
- Straw length: VDH 238-78 about 3-4 cm taller than Menuet.
- Mildew resistance factor: Menuet possesses the resistance factor ML(La) - VDH 228 possesses another, unidentified resistance factor.

3. Statement.

To our knowledge, the variety "Spirit" (VDH 238-78) is, by the given combination of characters, distinct from any other two rowed spring barley variety. No notice was received of insufficient distinction from other varieties from any private or official authority where the variety was tested.

Rilland, 21.01.1985
M.E. Roothaan/LJ

FORM APPROVED. OMB NO. 40-R3712

FORM LPGS-470-5 (4-78)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C *(Barley)*

OBJECTIVE DESCRIPTION OF VARIETY

BARLEY *(HORDEUM VULGARE)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Koninklijk Kweekbedrijf en Zaadhandel D.J. van der Have B.V.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
P.O. Box 1
4420 AA Kapelle, The Netherlands

FOR OFFICIAL USE ONLY
PVPO NUMBER 8500061
VARIETY NAME OR TEMPORARY DESIGNATION Spirit (VDH 238-78)

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER [2] Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

2. MATURITY (50% Flowering):

[2] 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

[0] No. of days *Earlier* than ..... [0]
[6] No. of days *Later* than ..... [7]
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

3, PLANT HEIGHT (From soil level to top of head):

[2] 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

[0][8] Cm. *Shorter* than ..... [7]
[0][0] Cm. *Taller* than ..... [0]
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

4. STEM:

[1] Exertion *(Flag to spike at maturity):* 1 = 0 - 3 cm. 2 = 3 - 10 cm. 3 = 10 - 15 cm.
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT

[0][0] NO. OF NODES (Originating from node above ground)

[1] Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN
[1] Shape of Neck: 1 = STRAIGHT 2 = SNAKY 3 = OTHER (Specify) _____

5. LEAF:

[1] Basal leaf sheath *(seedling):* 1 = GLABROUS 2 = PUBESCENT
[1] Position of flag leaf *(at boot stage):* 1 = DROOPING 2 = UPRIGHT

[3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY
[1][0] MM. WIDTH (First leaf below flag leaf)

[-][-] CM. LENGTH (First leaf below flag leaf)
[2] Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

[1] Type: 1 = TWO-ROWED 2 = SIX-ROWED
[2] Density: 1 = LAX 2 = ERECT (Not dense) 3 = ERECT (Dense)

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____
[2] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY

[0] Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD
[3] Rachis *(Hair on edge):* 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:

[3] Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA
[3] Hairs: 1 = NONE 2 = SHORT 3 = LONG

[3] Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

[2] Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES 3 = MORE THAN EQUAL TO LENGTH OF GLUMES

[3] Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

FORM LPGS-470-5 (4-78) (Reverse) 8500061

8. LEMMA:

[5] Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS
3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike)
5 = LONG (longer than spike) 6 = HOODED

[4] Awn Surface: 1 = AWNLESS 2 = SMOOTH 3 = SEMISMOOTH 4 = ROUGH

[1] Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

[1] Hair: 1 = ABSENT 2 = PRESENT

[2] Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE

[2] Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

[2] Hairs: 1 = FEW 2 = MANY

10. SEED:

[2] Type: 1 = NAKED 2 = COVERED

[1] Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

[3] Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.)
4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

[2] Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

[1] Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

[0][0] PERCENT ABORTIVE

[4][3] GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SEPTORIA	[2] NET BLOTCH	[0] SPOT BLOTCH	[2] POWDERY MILDEW
[1] LOOSE SMUT	[0] BACTERIAL BLIGHT	[0] COVERED SMUT	[ ] FALSE LOOSE SMUT
[0] STEM RUST	[1] LEAF RUST	[0] SCAB	[2] SCALD ?
[0] AY	[0] BSMV	[1] BYDV	[2] OTHER (Specify) yellow rust

12. INSECT: (0 = Not tested, 1 = Susceptible 2 = Resistant)

[0] GREEN BUG	[0] ENGLISH GRAIN APHID	[0] CHINCH BUG	[0] ARMYWORM
[0] GRASS HOPPERS	[0] CEREAL LEAF BEETLE	[0] OTHER (Specify) _____	

HESSIAN FLY RACES: [0] GP [0] A [0] B [ ] C; [0] D [0] E [0] F [ ] G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[1] DDT [0] OTHER (Specify) _____

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Menuet	Seed size	Menuet
Leaf size	Menuet	Coleoptile elongation	–
Leaf color	Menuet	Seedling pigmentation	–
Leaf carriage	Menuet		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

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Exhibit D

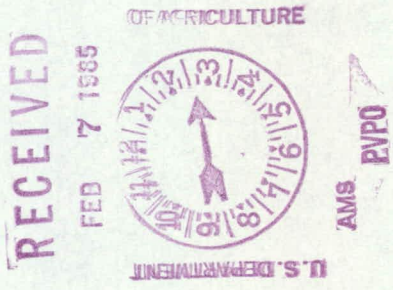
Additional Description of the spring barley variety "Spirit" (VDH 238-78)

The variety has been tested in MAES-trials, Montana in 1982, 1983 and 1984. A summary of trial results in 1982 and 1983 is given in enclosure D1. The trial results 1984 are not available yet.

The variety has also been tested in Burley Idaho in trials 1983 and 1984 in replicated yield trials, conducted by Adolphe Coors company. A copy of the 1983 trial results is given in enclosure D2.

Malting tests in Europe indicate that the variety has medium malting potential. At present, no reliable malting data are available from trials in the U.S.A.

Rilland, 21.1.1985
M.E. Roothaan/ID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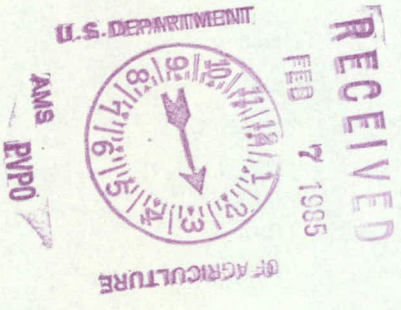
Enclosure D1

Summary Intrastate MAES-trials spring barley, Montana, 1982 and 1983

VDH 238-78

Average figures

Character	1982				1983			
	Nr. of trials	VDH 238-78	Menuet	Klages	Nr. of trials	VDH 238-78	Menuet	Klages
Yield q/ha	9	42.8	42.6	41.5	8	47.8	47.1	43.6
Testweight kg/hl	9	67.7	68.9	65.7	9	68.9	68.7	66.6
Heading date	9	184.8	183.9	185.6	8	178.5	178.3	179.9
Plant height cm	9	72.0	68.9	76.3	8	69.6	65.4	70.0
% plump	9	81.3	85.4	72.7	9	84.9	84.6	75.6
% thin	6	10.5	6.4	15.9	6	6.8	5.5	12.1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Enclosure D2

1983 MALTING BARLEY OBSERVATION TRIAL - BURLEY, IDAHO

Barley Variety	Yield Kg/ha	Yield Bushels/ Acre	Protein % Dry Basis	Bushel Weight Pounds Test Wt.	% Lodging	Growing Days to Anthesis	% Reten. on 2.4 mm Screen	Plant Height (cm)	*Agtron Color
** VDH 432-77-A	6180	110.4	10.2	49.7	0	77	95%	91	50
** VDH 224-76-C	6245	111.5	10.1	49.2	0	76	94%	89	55
** VDH 432-77	5099	91.1	9.4	51.4	0	78	98%	94	59
** VDH 315-78	6556	117.1	11.6	49.5	5	74	89%	91	52
VDH 043-80	5224	93.3	9.2	49.5	0	80	95%	89	47
VDH 020-80	5204	92.9	10.1	48.6	0	75	97%	84	48
** VDH 238-78	5275	94.2	10.8	50.1	0	75	95%	79	65
VDH 092-78	4495	80.3	8.1	48.5	0	77	96%	71	56
VDH 217-78-A	4527	80.9	9.6	49.2	0	76	97%	81	46
VDH 163-79	3903	69.7	8.4	49.3	0	77	96%	69	44
VDH 224-76-A	4521	80.7	12.2	49.3	0	77	98%	91	44
VDh 039-80	4983	89.0	11.5	45.3	0	80	96%	89	58
Moravian III	4592	82.0	10.5	50.9	0	72	97%	81	59
Overall average (514 lines)	4657	83.1	10.3	49.5	0	74	94	84	54

*Color is determined on an Agtron Instrument which measures relative spectral light reflectance of the barley. Low reading = dark barley, high reading = bright barley.

** We will continue to evaluate these in '84.

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1-237A.2